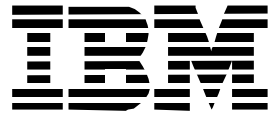


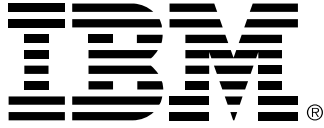
# LCD Monitor

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User's Guide



## Safety: Read first

Before installing this product, read the Safety Information.

Avant d'installer ce produit, lisez les consignes de sécurité.

Vor der Installation dieses Produkts die Sicherheitshinweise lesen.

Πριν εγκαταστήσετε το προϊόν αυτό, διαβάστε τις πληροφορίες ασφάλειας (safety information).

לפני שתתקינו מוצר זה, קראו את הוראות הבטיחות.

A termék telepítése előtt olvassa el a Biztonsági előírásokat!

Prima di installare questo prodotto, leggere le Informazioni sulla Sicurezza

Antes de instalar este produto, leia as Informações de Segurança.

Läs säkerhetsinformationen innan du installerar den här produkten.

Prije instalacije ovog produkta obavezno pročitajte Sigurnosne Upute.

Les sikkerhetsinformasjonen (Safety Information) før du installerer dette produktet.

Przed zainstalowaniem tego produktu, należy zapoznać się z książką "Informacje dotyczące bezpieczeństwa" (Safety Information).

Пред да се инсталира овој продукт, прочитајте информацијата за безбедност.

Pred inštaláciou tohto zariadenia si peèitajte Bezpeènostné predpisy.

Pred namestitvijo tega proizvoda preberite Varnostne informacije.

Ennen kuin asennat tämän tuotteen, lue turvaohjeet kohdasta Safety Information

Pred instalací tohoto produktu si přečtejte příručku bezpečnostních instrukcí.

在安裝本產品之前，請仔細閱讀 **Safety Information** (安全信息)。

安裝本產品之前，請先閱讀「安全資訊」。

مع، يجب قراءة ذات السلامة

Læs sikkerhedsforskrifterne, før du installerer dette produkt.

製品の設置の前に、安全情報をお読みください。

본 제품을 설치하기 전에 안전 정보를 읽으십시오.

Antes de instalar este producto lea la información de seguridad.

Antes de instalar este produto, leia as Informações de Segurança.

Перед установкой продукта прочтите инструкции по технике безопасности.

Lees voordat u dit product installeert eerst de veiligheidsvoorschriften.

## **First Edition (April 2002)**

Note: For important information, refer to the Monitor Safety and Warranty manual that comes with this monitor.

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## TABLE OF CONTENTS

BEFORE YOU OPERATE THE MONITOR .....	1
PACKING LIST .....	1
CONTROLS AND CONNECTORS .....	1
ADJUSTING THE VIEWING ANGLE .....	2
OPERATING INSTRUCTIONS .....	3
GENERAL INSTRUCTIONS .....	3
HOW TO ADJUST A SETTING .....	4
ADJUSTING THE PICTURE .....	5
DEVICE DRIVER INSTALLATION .....	7
TECHNICAL SUPPORT (FAQ).....	11
TROUBLESHOOTING.....	11
APPENDIX .....	13
SPECIFICATIONS .....	13
VIDEO CONNECTOR PIN ASSIGNMENT .....	14
FACTORY PRESET TIMING TABLE .....	15
POWER MANAGEMENT .....	16
SERVICE INFORMATION .....	17

Before operating the monitor please read this manual thoroughly. This manual should be retained for future reference.

## PACKING LIST

The product package should include the following items:

1. LCD Monitor
2. Setup Guide
3. Power Adapter/Cord
4. User's Guide CD with installation files
5. Safety/Warranty Booklet

## CONTROLS AND CONNECTORS

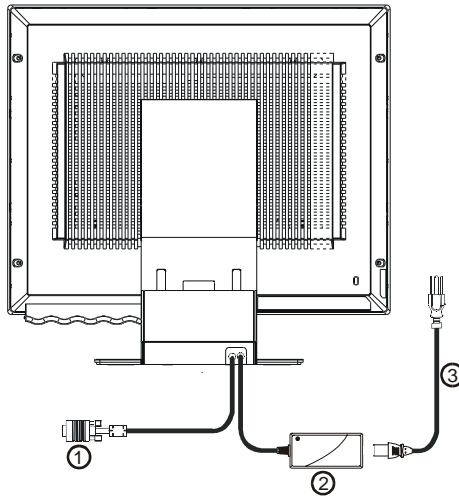


Figure 1 Connecting Cables

1.	Signal Cable	3.	AC Power Cord
2.	External Power Adapter		

## VIDEO CABLE

### Connecting the Signal Cable:

The LCD monitor comes with a built-in signal cable. Plug the signal cable's 15-pin connector into the computer's video port and tighten the two screws on the cable connector. Refer to **Appendix** for the detail connector pin assignment.

## POWER CORD

### Power Source:

1. This LCD monitor has a universal power adapter that allows operation in either 100/120V AC or 220/240V AC voltage area (No user adjustment is required.)
2. Connect the power cord into your LCD monitor's power input socket, and then plug the other end into a 3-pin AC power outlet.

## ADJUSTING THE VIEWING ANGLE

- For optimum viewing it is recommended to look at the full face of the monitor, then adjust the monitor's angle to your own preference.
- Hold the stand so you do not topple the monitor when you change the monitor's angle.
- You are able to adjust the monitor's angle from  $-4^{\circ}$  to  $41^{\circ}$ .

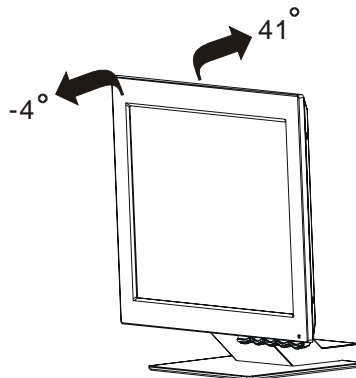


Figure 2

## NOTES

- Be careful if you touch the LCD screen, you may damage it.
- Be careful. Do not catch your fingers or hands when you change the angle.

# OPERATING INSTRUCTIONS

## GENERAL INSTRUCTIONS

Press the power button to turn the monitor on or off. The other control buttons are also located on front panel of the monitor (See Figure 3). By changing these settings, the picture can be adjusted to your personal preferences.

- Press the power button to turn on the monitor. The power indicator will light up.

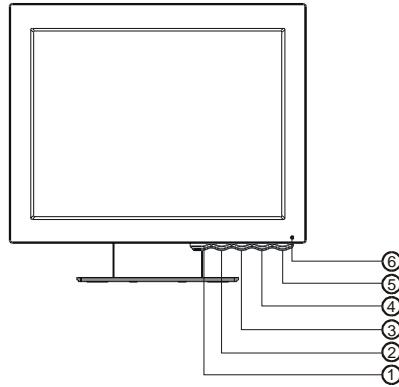








Figure 3 Control buttons

## CONTROLS

Icon	Control	Description
1 	Exit	Displays the OSD main menu Exits from menus and sub-menus Exits the OSD
2 	Left Arrow	Displays the OSD main menu Moves the cursor to highlight icons and other options
3 	Right Arrow	Displays the OSD main menu Moves the cursor to highlight icons and other options
4 	OSD Enter	Displays the OSD main menu Enters menus and sub-menus and selects the highlighted option
5 	Power Switch	Switches the monitor on and off
6 	LED	The LED indicator



## Operation

- Press any OSD control buttons to display the main OSD menu.
- Use the Arrow buttons to move among the icons. Select an icon and press OSD Enter to access that function. There is a sub-menu for you to move between options by using the Arrow buttons. Then press OSD Enter to select that function. Use the Arrow buttons to make adjustments.
- Press the Exit button to move backwards through the sub-menus and exit from the OSD.

### OSD Lock / Unlock:

This feature allows you to secure the current control settings, so that you cannot inadvertently change these settings while you adjust Brightness and Contrast. You can unlock the OSD controls through the same procedure.

Push and hold the OSD Enter button for 10 seconds to Lock or to Unlock. When locked, a "LOCKED" message will be displayed.

## HOW TO ADJUST A SETTING

The settings adjusted by the user controls are viewed through the On-Screen Display (OSD). Press any OSD buttons to activate the OSD.










### Initial appearance of OSD








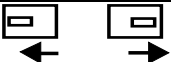

OSD Message

## ADJUSTING THE PICTURE

### OSD functions

OSD icon	Description	Sub-menu(s)	Controls and Adjustments
 Brightness	Adjusts brightness		
 Contrast	Adjusts contrast		
 IMAGE LOCK	This image lock function is used to adjust the level of noise in the video signal, which causes horizontal lines or areas on the screen where the image appears to be unstable and jitters or shimmers. This can be done automatically or manually.	Automatic	Automatic adjustment
 IMAGE LOCK (Continued)	Use the Arrow buttons to adjust away the interference. If satisfactory results are not obtained by using the Fine adjustment first, then use the COARSE adjustment and finally use FINE adjustment again. These actions may change the width of the display image. Use the H-Position function on the image position menu to center the display image on the screen.	Manual • Fine • Coarse	
 IMAGE POSITION	Moves the screen left and right or up and down.	H-position	
		V-position	

## OSD functions

 COLOR	Select the Color Mode you find most comfortable and then fine tune the color using the user Color Mode menu, if necessary.	Color Mode	Mode 1 (Cool White, 9300°K)  Mode 2 (Normal White, 7200°K)  Mode 3 (Warm White, 6500°K)
		User Mode – • Red	Increases or decreases redness
		• Green	Increases or decreases greenness
		• Blue	Increases or decreases blueness
 RESET	Resets the Brightness, Contrast and Color settings.	Color Reset	NO–Does not make the adjustment YES–Resets the color
	Resets the image position settings.	Geometry Reset	NO– Does not make the adjustment YES–Resets the geometry
 INFORMATION	Shows information about the addressability and the horizontal and vertical frequencies of the images received from the computer		
 LANGUAGE	The language chosen affects only the language of the OSD. It has no effect on any software running on the computer.		Select one of the five languages to use for the OSD.
 OSD MENU POSITION	Changes the position of the OSD on the screen.	H-Position	
		V-Position	

## Device driver installation

Use the User's Guide and Installation Files CD that comes with your monitor to install the appropriate device driver for your operating system.

---

### Installing the Windows XP device driver

To manually install or update the device driver for the Microsoft® Windows® XP operating system, perform the following steps:

1. Insert the User's Guide and Installation Files CD into the computer CD- ROM drive.
  2. Click **Start** → **Control Panel** → **Appearance & Themes** and then click the **Display** icon.
  3. In the Display Properties window, click the **Settings** tab, and then click **Advanced**.
  4. Click the **Monitor** tab, and then click **Properties** → **Driver** tab → **Update Driver**.
  5. When the Hardware Update Wizard window opens, select "Install the software automatically," click **Next>** and then **Finish** to complete the installation.
  6. Close the Display Properties window.
  7. Remove the User's Guide and Installation Files CD from the computer CD-ROM drive.
- 

### Installing the Windows Me device driver

To manually install or update the device driver for the Microsoft Windows Millennium Edition operating system, perform the following steps:

1. Click **Start** → **Settings** → **Control Panel** and then double-click **Display**.
2. In the Display Properties window, click the **Settings** tab, and then click **Advanced**.
3. Click the **Monitor** tab, and then click **Change** → **Specify** the location of the **driver** → **Next**.

4. When the Update Device Driver Wizard window opens, select "Display a list of all the drivers in a specific location, so you can select the driver you want," and click **Next>**.
5. Insert the the Device driver and User's Guide CD into the computer CD- ROM drive, then click **Have Disk**.
6. Type d:\ (change the drive letter to match your CD-ROM drive if it is not drive D) in the **Copy manufacturer's files from:** box, then click **OK**.
7. Click **Next>**, **Next>**, and then **Finish** to complete the installation.
8. Close the Display Properties window.
9. Remove the User's Guide and Installation Files CD from the computer CD-ROM drive.

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## Installing the Windows 2000 device driver

To manually install or update the device driver for the Microsoft Windows 2000 Professional operating system, perform the following steps:

1. Click **Start** → **Settings** → **Control Panel** and then double-click **Display**.
2. In the Display Properties window, click the **Settings** tab, and then click **Advanced**.
3. Click the **Monitor** tab, and then click **Properties** → **Driver** → **Update Driver**.
4. When the Update Device Driver Wizard window opens, select "Search for a suitable driver for my device," and click **Next>**.
5. Insert the Device Driver and User's Guide CD into the computer CD-ROM drive, type d:\ (change the drive letter to match your CD-ROM drive if it is not drive D) in the **Copy manufacturer's files from:** box, click **Next>** and then **Finish** to complete the installation.
6. Close the Display Properties window.
7. Remove the User's Guide and Installation Files CD from the computer CD-ROM drive.

---

## Installing the Windows 98 device driver

Windows 98 automatically detects the new monitor and displays the Add New Hardware Wizard dialog box if the device driver is not already installed.

1. Insert the Device Driver and User's Guide CD into the computer CD-ROM drive, and click **Next>** twice when the Add New Hardware Wizard window opens.
2. Click the **CD-ROM drive** box to install the device drivers from the CD and then click **Next>**.
3. Confirm that the device driver was found on the CD, and click **Next>** twice to install the device driver.
4. Click **Finish** to exit the Add New Hardware Wizard dialog box.

To manually install or update the device driver for the Microsoft Windows 98 operating system, perform the following steps:

1. Click **Start → Settings → Control Panel** and then double-click **Display**.
2. In the Display Properties window, click the **Settings** tab, and then click **Advanced**.
3. Click the **Monitor** tab, and then click **Change**.
4. When the Update Device Driver Wizard window opens, follow the steps in the previous paragraph.
5. Remove the User's Guide and Installation Files CD from the computer CD-ROM drive.

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## Installing the Windows 95 device driver

Right-click the My computer icon on the computer desktop and then select **Properties** → System to view the version number listed in the System window. Perform the steps below for the appropriate version.

If you have Windows 95 Version 4.00.950A, use the following steps to manually install or update the device driver:

1. Click **Start → Settings → Control Panel** and then double-click **Display**.

2. In the Display Properties window, click the **Settings** tab and then click **Change Display Type**.
3. In the **Change Display Type** window, click **Change** and then click **Have Disk**.
4. Insert the Device Driver and User's Guide CD into the computer CD-ROM drive, type d:\ (change the drive letter to match your CD-ROM drive if it is not drive D) in the **Copy manufacturer's files from:** box, and click **OK**.
5. In the Select Device window, click the appropriate monitor model and then click **OK**.
6. In the Change Display Type window, click **Close**.
7. In the Display Properties window, click **OK**.
8. Remove the User's Guide and Installation Files CD from the computer CD-ROM drive.

If you have Windows 95 Version 4.00.950B, use the following steps to manually install or update the device driver:

1. Click **Start** → **Settings** → **Control Panel** and then double-click **Display**.
2. In the Display Properties window, click the **Settings** tab and then click **Advanced Properties**.
3. In the Advanced Display Properties window, click the **Monitor** tab and then click **Change**.
4. In the **Select Device** window, click **Have Disk**.
5. Insert the Device Driver and User's Guide CD into the computer CD-ROM drive, type d:\ (change the drive letter to match your CD-ROM drive if it is not drive D) in the **Copy manufacturer's files from:** box, and click **OK**.
6. In the **Select Device** window, click the appropriate monitor model and then click **OK**.
7. In the Advanced Display Properties window, click **Close**.
8. In the Display Properties window, click **OK**.
9. Remove the User's Guide and Installation Files CD from the computer CD-ROM drive.

# TECHNICAL SUPPORT (FAQ)

## TROUBLESHOOTING

Problem	Possible Cause	Suggested Action	Reference
Screen is blank and power indicator is off	No Power to monitor	<ul style="list-style-type: none"> <li>● Ensure that the electrical outlet and the monitor are both switched on.</li> <li>● Check that the power cord is firmly plugged into the electrical outlet and the power supply unit.</li> <li>● Try another power cord.</li> <li>● Try another electrical outlet.</li> </ul>	<b>CONTROLS AND CONNECTORS</b> Section on page 1
Screen is blank and power indicator is steady green	Brightness and Contrast may be too low	<ul style="list-style-type: none"> <li>● Adjust brightness and contrast.</li> </ul>	<b>OPERATING INSTRUCTIONS</b> Section on page 3
Screen is blank and power indicator is steady amber	The monitor is in the Power Management Standby state	<ul style="list-style-type: none"> <li>● Press any key on the keyboard or move the mouse to restore operation.</li> <li>● Check the Power Management software on your computer</li> </ul>	<b>Power Management</b> section on page 16
Screen is blank and power indicator is flashing green every 0.5 second	Display mode of the computer is outside the range of the monitor	<ul style="list-style-type: none"> <li>● Reconfigure the computer to use a supported display mode.</li> </ul>	<b>Factory set display mode</b> Section on page 15



<b>Problem</b>	<b>Possible Cause</b>	<b>Suggested Action</b>	<b>Reference</b>
Screen is blank and power indicator is flashing amber every 0.5 or 1 second	The monitor is in the Power Management Suspend or Off state	<ul style="list-style-type: none"> <li>● Check the Power Management software on your computer</li> </ul>	<b>Power Management</b> section on page 16
Screen is blank and power indicator is flashing green every 1 second	The monitor is not receiving a video signal	<ul style="list-style-type: none"> <li>● Check that the signal cable is firmly connected to the computer.</li> <li>● Check that no pins are bent in the signal cable connector.</li> </ul>	<b>CONTROLS AND CONNECTORS</b> Section on page 1
Image appears to be smeared		<ul style="list-style-type: none"> <li>● Select IMAGE LOCK menu in the OSD. Then select MANUAL to adjust FINE/COARSE settings.</li> </ul>	<b>OPERATING INSTRUCTIONS</b> Section on page 3
Image appears to be discolored	The Color setting may be incorrect	<ul style="list-style-type: none"> <li>● Adjust the Color settings.</li> </ul>	<b>OPERATING INSTRUCTIONS</b> Section on page 3
A few dots are missing, discolored, or inappropriately lighted.		<ul style="list-style-type: none"> <li>● The LCD contains over 2,300,000 thin film transistors (TFTs). A small number of missing, discolored, or lighted dots may be present on the screen, which is an intrinsic characteristic of the TFT LCD technology and is not an LCD defect.</li> </ul>	

“COARSE” (pixel frequency) controls the number of pixels scanned by one horizontal sweep. If the frequency is not correct, the screen shows vertical stripes and the picture does not have the correct width.

“FINE” adjust the phase of the pixel clock signal. With a wrong phase adjustment the picture has horizontal disturbances in light picture.

For “FINE” and “COARSE” adjustment use a dot pattern or Windows 95/98 /ME/XP/2000 shutdown screen.

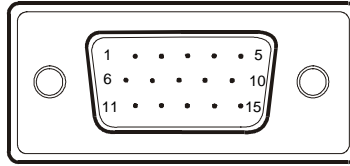
# APPENDIX

## SPECIFICATIONS

### IBM 9512-AW\*/ AB\* TFT Color LCD Monitor

LCD Panel	Driving system	TFT Color LCD
	Size	381mm(15.0")
	Pixel pitch	0.297mm(H) x 0.297mm(V)
	Viewable angle	120° (H) 100° (V)
	Response time	30 ms
Input	Video	R, G, B Analog Interface
	Separate Sync.	H/V TTL
	H-Frequency	30kHz – 60kHz
	V-Frequency	55Hz-75Hz
Display Colors		16.7 million Colors
Dot Clock		80MHz
Max. Resolution		1024 x 768
Plug & Play		VESA EDDC
EPA ENERGY STAR®	ON Mode	≤30W
	Active OFF	≤3W
	OFF Mode	<1W at 100Vac <2W at 220Vac
Input Connector		D-Sub 15pin
Input Video Signal		Analog:0.7Vp-p 75 OHM,
Maximum Screen Size		Horizontal: 304.1mm (12.0") Vertical: 228.1mm (9.0")
Power Source		100~240VAC,50~60Hz
Environmental Considerations		Operating Temp: 10°C to 35°C 5°F to 95°F Ship/Storage Temp: -20° to 60°C -4°F to 140°F Operating Humidity: 10% to 80% non-condensing Ship/Storage Humidity: 5% to 95% non-condensing
Weight (N. W.) unpacked: packaged:		4.8kgs 6.2Kgs
Regulatory Compliance		UL, CSA, FCC, TÜV, CE, TCO'99 for Pearl White models TCO'95 for Stealth Black models

## CONNECTOR PIN ASSIGNMENT



15 - Pin Color Display Signal Cable

PIN NO.	DESCRIPTION	PIN NO.	DESCRIPTION
1.	Red	9.	+5V
2.	Green	10.	Detect Cable
3.	Blue	11.	Ground
4.	Ground	12.	DDC-Serial Data
5.	Ground	13.	H-Sync
6.	R-Ground	14.	V-Sync
7.	G-Ground	15.	DDC-Serial Clock
8.	B-Ground		

## FACTORY PRESET TIMING TABLE

### DISPLAY MODES

The display mode the monitor uses is controlled by the computer. Therefore, you should refer to your computer documentation for details in how to change display modes.

The image size, position and shape may change when the display mode changes. This is normal and the image can be readjusted using the monitor controls.

Unlike CRT monitors, which require a high refresh rate to minimize flicker, TFT technology is inherently flicker-free. If possible, configure your computer for 1024 X 768 addressability at 60Hz vertical refresh rate.

For the display modes listed below, the screen image has been optimized during manufacture.

### Factory Set Display Modes

ADDRESSABILITY	REFRESH RATE	HORIZONTAL FREQUENCY
640 × 350	70Hz	31.5kHz
640 × 480	60Hz	31.5kHz
640 × 480	72Hz	37.9kHz
640 × 480	75Hz	37.5kHz
640 × 480	67Hz	35.0kHz
720 × 400	70Hz	31.5kHz
800 × 600	75Hz	46.9kHz
800 × 600	72Hz	48.1kHz
800 × 600	60Hz	37.9kHz
800 × 600	56Hz	35.2kHz
832 × 624	75Hz	49.7kHz
1024 × 768+	60Hz	48.4kHz
1024 × 768	70Hz	56.5kHz
1024 × 768	75Hz	60.0kHz

+ Recommended

## Power Management

As an ENERGY STAR® Partner, IBM has determined that this product meets the ENERGY STAR® guidelines for energy efficiency.

The power management feature is invoked when the computer recognizes that you have not used your mouse or keyboard for a user-definable period. There are several states as described in the table below.

IBM recommends that you switch off your monitor at the end of each working day, or whenever you expect to leave it unused for long periods during the day.

State	Power Indicator	Screen	Restoring Operation	Compliance
On	Steady green	Normal		
Active Off	Steady amber	Blank	Press a key or move the mouse.	ENERGY STAR® And NUTEK
Off	Steady amber	Blank	Press a key or move the mouse. ‡	ENERGY STAR® And NUTEK

‡The picture will be re-appeared few seconds later.

## Service Information

The following parts are for use by IBM service, or IBM authorized dealers, to support customer warranty. Parts are for service use only.

### Model Type 9512-AB\*/9512-AW\*

P/N	Description	Video	Color	MTM	Geography
31P7251	FRU Monitor	Analog	SB	9512-AB1	WW
31P7252	FRU Monitor	Analog	PW	9512-AW1	WW
31P7253	FRU Stand	Analog	SB	9512-AB1	WW
31P7254	FRU Stand	Analog	PW	9512-AW1	WW
31P7255	FRU Power Supply	Analog	Black	9512-AW1 9512-AB1	WW
31P7256	FRU Video Cable	Analog	Black	9512AW1 9512-AB1	WW

**Note:**

WW FRU Monitor includes Monitor, Stand, Power Supply & Video Cable.